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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/625,654

07/24/2003

Masanobu Okada

O3020.0342/P342

8902

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7590

01/24/2006

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EXAMINER

KOYAMA, KUMIKO C

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/625,654

Applicant(s)

OKADA, MASANOBU

Examiner

Kumiko C. Koyama

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 5 and 9 is/are allowed.  
6) ☒ Claim(s) 1-4 and 6-8 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1205.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

Amendment received on November 11, 2005 has been acknowledged.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirasawa et al (US 6,824,062) in view of Miyashita (US 5,397,883).

Re claims 1-4 and 8: Hirasawa teaches a card reader having a shutter 502 (col 22, lines 10-17), which is a card entrance to the card reader, a magnetic head 24 that reads out data from the card (col 6, lines 62-65), and a card transporting mechanism for the card reader that discharges the card from the card reader (col 5, lines 1-5; col 7, lines 20-25). Hirasawa also teaches a card entrance unit 508 that is attached to the outside surface of the card reader entrance as shown in Fig. 30. A pre-head 515 is attached to the card entrance unit 508, and detects an insertion of a card 501 (col 22, lines 60-63). The pre-head 515 is a sensor for detecting the presence of the card.

Hirasawa does not specifically teach an ultrasonic wave sensor and detecting whether the card is present outside when the card is discharged by the card conveyance mechanism.

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Hirasawa does not specifically teach an output circuit for outputting information read by the readout head.

Miyashita teaches that the outlet 16 of the card reader is provided with a sensor 22 for sensing whether the magnetic commuter pass 12 is discharged (col 4, lines 7-11). Miyashita also teaches proximity sensors that detect the object when the sensor catches the reflected light in the predetermined time. The proximity sensor is supersonic waves sensor, which radiates the supersonic waves and detects it (col 3, lines 53-67). Supersonic waves are ultrasonic waves. Miyashita also teaches that the CPU 42 compares the read inspection information of ticket with reference data memorized in RAM 46, the information thus read is used to determine whether the passenger should be allowed to pass or not (col 5, lines 50-55). Such disclosure teaches output circuit for outputting information read by the readout head and also a transaction processing unit.

Therefore, it would have been obvious to artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Miyashita to the teachings of Hirasawa in order to ensure that the card is discharged properly by monitoring the card to prevent card jam within the reader, and to process the card to ensure that the card is valid for further use.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirasawa in view of Miyashita and Okano (JPO 11-153666).

Hirasawa teaches a card reader having a shutter 502 (col 22, lines 10-17), which is a card entrance to the card reader, a magnetic head 24 that reads out data from the card (col 6, lines 62-65), and a card transporting mechanism for the card reader that discharges the card from the card reader (col 5, lines 1-5; col 7, lines 20-25). Hirasawa also teaches a card entrance unit 508 that is attached to the outside surface of the card reader entrance as shown in Fig. 30. A pre-head 515 is

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attached to the card entrance unit 508, and detects an insertion of a card 501 (col 22, lines 60-63). The pre-head 515 is a sensor for detecting the presence of the card.

Hirasawa does not specifically teach an ultrasonic wave sensor and detecting whether the card is present outside when the card is discharged by the card conveyance mechanism.

Hirasawa does not specifically teach an output circuit for outputting information read by the readout head.

Miyashita teaches that the outlet 16 of the card reader is provided with a sensor 22 for sensing whether the magnetic commuter pass 12 is discharged (col 4, lines 7-11). Miyashita also teaches proximity sensors that detect the object when the sensor catches the reflected light in the predetermined time. The proximity sensor is supersonic waves sensor, which radiates the supersonic waves and detects it (col 3, lines 53-67). Supersonic waves are ultrasonic waves.

Miyashita also teaches that the CPU 42 compares the read inspection information of ticket with reference data memorized in RAM 46, the information thus read is used to determine whether the passenger should be allowed to pass or not (col 5, lines 50-55). Such disclosure teaches output circuit for outputting information read by the readout head and also a transaction processing unit.

Therefore, it would have been obvious to artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Miyashita to the teachings of Hirasawa in order to ensure that the card is discharged properly by monitoring the card to prevent card jam within the reader, and to process the card to ensure that the card is valid for further use.

Hirasawa as modified by Miyashita does not specifically teach a memory for storing a reference duration and an abnormality determination unit.

Okano discloses emitting ultrasonic wave repeatedly from an ultrasonic wave transmission element of each ultrasonic sensor toward a monitoring region and receiving reflection wave appearing in a specific monitoring period from the time of ultrasonic wave emission using an ultrasonic wave reception element at each time, the ultrasonic wave emission interval is made irregular for each ultrasonic wave sensor and the reflection wave received in the monitoring period is stored in memory means in turn. Based on a plurality of reflection wave data stored in the memory means, the existence of an object in the monitoring region is detected (Abstract).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Okano to the teachings of Hirasawa as modified by Miyashita because ultrasonic wave does not require direct contact with the object, and therefore, provides the flexibility of accommodating different shaped and sized objects to detect foreign objects other than a regular card to further prevent illegal objects from entering the card reader.

### ***Response to Arguments***

4. Applicant's arguments filed November 10, 2005 have been fully considered but they are not persuasive.

Applicant submits that the cited prior art does not teach or show any sensor capable of detecting whether a card is present outside the card entrance when the card is discharged. The Applicant specifically argues that Hirasawa teaches the card entrance is "card entrance 516" and not the shutter 502. However, the Examiner respectfully disagrees and interprets differently. The

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card entrance 516 is a card entrance to the card entrance unit 508 and is not an actual entrance to the internal mechanisms of the card reader. The card transporting means starts to convey the card only after the card is passed beyond the shutter 502, and the magnetic head that is used to read data on the card is also located inside the shutter. Therefore, the shutter is considered as a card entrance. Also, the claim does not specifically recited where the "card entrance" is located, and does not specifically recite that the card entrance must be on the exterior surface or it must be located outside of the card entrance unit of the card reader. Since there is no limitation as what exactly is claimed as the card entrance, the Examiner believes that by providing the reasonably broadest interpretation, the shutter 502 is still a card entrance to the card reader because the shutter is the entrance to the internal reading and conveying mechanisms of the card reader. Therefore, the Examiner believes that Hirasawa in view of Miyashita still reads on the claimed invention and maintains her rejection. Accordingly, this action is Final.

*Allowable Subject Matter*

5. Claims 5 and 9 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record Hirasawa teaches a card reader having a shutter, which is a card entrance to the card reader, a magnetic head that reads out data from the card, and a card transporting mechanism for the card reader that discharges the card from the card reader. Hirasawa also teaches pre-head that is attached to the card entrance unit, and detects an insertion of a card. The pre-head 515 is a sensor for detecting the presence of the card.

Another prior art of record Miyashita teaches that the outlet of the card reader is provided with a sensor for sensing whether the magnetic commuter pass that is discharged. Miyashita also teaches proximity sensors that detect the object when the sensor catches the reflected light in the predetermined time. The proximity sensor is supersonic waves sensor, which radiates the supersonic waves and detects it. Supersonic waves are ultrasonic waves. Miyashita also teaches that the CPU compares the read inspection information of ticket with reference data memorized in RAM, the information thus read is used to determine whether the passenger should be allowed to pass or not. Such disclosure teaches output circuit for outputting information read by the readout head and also a transaction processing unit.

However, Hirasawa or Miyashita taken alone or in combination fails to teach an ultrasonic wave sensor that comprises a reference duration memory and an ultrasonic wave sensor signal processing circuit which uses the reflection signal and information in the memory to determine if the card is outside the card entrance.

### *Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



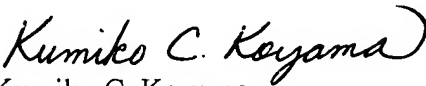
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kumiko C. Koyama whose telephone number is 571-272-2394. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Kumiko C. Koyama  
January 23, 2006

  
MICHAEL G. LEE  
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